

Notice of Allowability

Application No.

09/882,805

Examiner

Jeffrey T. Barton

Applicant(s)

GASCOYNE ET AL.

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 18 August 2005.
2. ☒ The allowed claim(s) is/are 1-18.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 20051021.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael Barrett on 24 October 2005.

The application has been amended as follows:

In the specification:

On page 6, before the section heading "**Detailed Description**", please insert the following text:

--Brief Description of Drawings

FIG. 1 shows an electrode array including a conductor patterned on a non-conducting substrate, in accordance with embodiments of this disclosure.

FIG. 2A shows MAP and DEP forces acting on a particle and a hydrodynamic flow profile, in accordance with embodiments of this disclosure.

FIG. 2B shows the movement of particles to characteristic heights, in accordance with embodiments of this disclosure.

FIGS. 3A-3E show exemplary magnetrode arrays for magnetophoretic

manipulations, in accordance with embodiments of this disclosure.

FIGS. 4A-4C show exemplary electrode and magnetrode combinations suitable for simultaneously providing magnetic and electric fields, in accordance with embodiments of this disclosure.

FIGS. 5A-5B show exemplary electrical excitation schemes, in accordance with embodiments of this disclosure.

FIGS. 6A-6C show exemplary magnetic field excitation schemes, in accordance with embodiments of this disclosure.

FIG. 7A shows magnetic materials that provide a magnetic field in a flow channel without the need for an external magnet, in accordance with embodiments of this disclosure.

FIG. 7B shows how an array of magnetrodes may be used to introduce inhomogeneity in a magnetic field derived from magnetic poles placed outside the chamber, without the need for a magnetrode pathway to the array, in accordance with embodiments of this disclosure.

FIG. 8 shows an exemplary embodiment of a separator using the dielectric and

magnetic separation principle for batch mode separation, in accordance with embodiments of this disclosure.

FIGS. 9A-9B show continuous mode separation, in accordance with embodiments of this disclosure. The outlet port arrangement comprises multiple ports configured so as to collect bands of fluid that travel through the flow chamber at certain defined distances from the electrode and magnetrode elements and from the walls of the flow chamber.—

2. The following is an examiner's statement of reasons for allowance:

Regarding instant method claims 1-12, 14, and 15, the Examiner agrees with Applicant's remarks submitted on 18 August 2005. Claim 13 had previously been indicated allowable for the reasons set forth in Applicant's remarks submitted on 31 March 2005.

Regarding apparatus claims 16-18, although the recitation "wherein the electrodes and magnetrodes are configured to generate forces that balance one another to displace constituents within the sample to equilibrium positions within the chamber . . ." corresponds in part to a recitation of intended use, neither Blankenstein et al nor any other prior art of record discloses or suggests an electrode/magnetrode configuration that is capable of performing this function. The claims are therefore considered to be patentable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

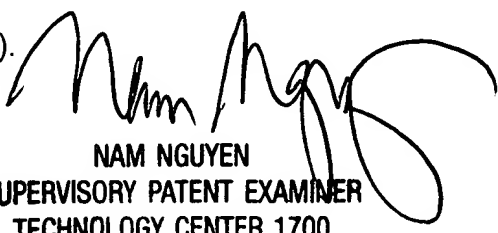
Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Jeffrey Barton, whose telephone number is (571) 272-1307. The examiner can normally be reached Monday-Friday from 8:30 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached at (571) 272-1342. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

JTB
24 October 2005


NAM NGUYEN
SUPERVISORY PATENT EXAMINER
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